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# The Development of a Comfortable Urban Environment on the Example of Ekaterinburg City

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**Abstract.** The creating of comfortable, safe living environment is the desire of all citizens and the population of the city. The successful way to create a new image of the cities (territories with huge potential) is to use a systematic approach. A comfortable urban environment will allow citizens to spend more time in the street, recharging with positive and wonderful mood. To get effective interactions, it would be good to concentrate the efforts of the city administration, expert communities, local activists and active citizens together to solve urban problems. Public spaces are one of the directions to develop a comfortable city environment. With them it will be possible to reprogram and integrate the historical solutions into the modern ones. The old place will get a new life. In this way small changes will lead to a tremendous transformation. To identify areas that require improvement we must do urban environment analysis. As an applied aspect, the rationale for the improvement of the Stone Tents park zone in the Ekaterinburg city is given. The experience gained in the project framework can be used to create a comfortable urban environment in other settlements.

## 1. Introduction

More than seventy-five percent of the population currently lives in modern cities. Cities are the centers and drivers for the development of the economy of modern territories. However, today almost all existing cities are built and formed. Therefore, we need to try to make already formed cities comfortable and safe for residents. That is, it is necessary to solve the problems of these already built cities. This is where public spaces will help us. They will help to create a comfortable urban environment.

### 1.1. Relevance and practical significance

The development of a comfortable urban space is an urgent goal of today. To reformat and reprogram the already existing public places - it is the most important task of today. Moreover, that must be done on a macro and micro scale. How to make small changes in public spaces which will lead to a tremendous transformation of the urban environment, where the citizens will get a new places of recreation and cultural leisure activities? The solution of these issues would undoubtedly lead to an improvement in the quality of life of citizens [1].

Moreover, it should be noted that people (a human capital) are the main resource for competition of cities and their development. It is a resource that provides economic growth in these territories. And



these people participate in the process of city transformation. And all this directly affects the improvement of the quality of life [2].

Thus, small changes, reformatting and reprogramming of public spaces will lead to a tremendous transformation. That will create a comfortable urban environment today.

### *1.2. Purpose and objectives of the study*

The purpose of the study is the development / creation of a comfortable urban environment on the example of Ekaterinburg city.

The objectives of this study in accordance with the goal:

- Consider spatial planning in the current environment;
- Understand how a comfortable urban environment is formed (using a systematic approach);
- To study the macroeconomic situation in the region, the level of socio-economic development and its prospects;
- Choose the territory of the urban environment of the Ekaterinburg city, requiring improvement;
- To present and discuss one of the land improvement projects;
- Assess the main results of the proposed improvement project.

Reference, scientific literature, periodicals, statistical sources, research by specialists in this field, Internet materials and other sources reflecting the theme of creating a comfortable urban environment where used as theoretical and methodological basis. Well-known methods of data collection and processing were also used as a research tool (such as statistical analysis, data grouping, comparison and analysis, etc.).

### *1.3. Known results and hypotheses*

Russian cities have a fairly extensive experience in the formation of a comfortable urban environment. There is a current process to form new image of Russian cities.

The best of them belongs to Moscow. Over the past few years, four hundred hectares of public spaces for citizens and visitors have been transformed. Everything done was within the framework of a comprehensive project to create a comfortable urban environment.

The projects for the improvement of public spaces in Nizhny Novgorod, Voronezh, Grozny, Novosibirsk, Belgorod, Omsk, Ekaterinburg and many others cities can be noted as most successful leaders of the program. The essence of these projects is simple – to solve urban problems so that citizens spend as much time as possible on the street. The latter is possible due to the integration of new ideas and technologies into the living conditions of residents.

The use and replication of the best foreign and domestic experience of the city-colleagues and taking into account local conditions will lead to the success of a comfortable urban environment formation. In the beginning we need to understand the existing areas problems and their relationship with all spheres of life. This will be helped by social (surveys, public hearings and discussions) and feasibility studies (monitoring of certain key performance indicators).

Research and work on projects to create a comfortable urban environment should be carried out inextricably linked with representatives of all interested parties:

- 1) City Administration;
- 2) Expert communities;
- 3) Local activists and active citizens.

It is necessary to develop a concept for further life improving of the city [3]. And then produce a strategy for its development in a specific area.

Ekaterinburg city has the potential to implement a project to form a comfortable urban environment.

Ekaterinburg urgent problems:

- Courtyards reconstruction;
- Public spaces creation;

- Improving the infrastructure of the city;
- Streets busy with cars, etc.

The solution of these problems will affect the social and economic climate of the city and contribute to improving the lives of citizens [4].

## 2. Theoretical bases

### 2.1. Research methodology

Public spaces are one of the important factors influencing the creation of a comfortable urban environment.

Today, the level of beautification is reduced in many Russian cities. One of the reasons is the insufficient regional funds allocated for improvement. Another good reason was the degradation of the previously developed system of urban settlements improvement.

A priority national project for the development of a comfortable urban environment (starting in 2017) is an important resource for interaction and increasing public confidence in government bodies.

According to the project "Formation of a comfortable urban environment", cities must be maximally focused on the convenience of people, citizens and guests. A comfortable urban environment includes public spaces, maximally adapted to the needs of citizens. The comfort for citizens is formed by a number of factors: transport accessibility, availability of necessary services, and accessibility of facilities for all categories of the population, the presence of organized public spaces and convenient layout of the street network. Satisfaction with their place of living, quality of life, health and safety are also important for citizens.

New approaches to the formation of a modern urban environment include:

- Organization of interaction between the population, public structures and business representatives in the implementation of improvement projects;
- Adoption of new rules for improvement of territories of settlements or updating existing;
- Formation of regional and municipal programs for a comfortable urban environment for each locality of Russia for 2018–2022;
- Development of systematic indicators for urban environment quality;
- Creation of a federal registry of the most successfully implemented projects [5].

Active work is underway today on the formation of a comfortable urban environment program.

The program and its projects are aimed at changing and improving the appearance of cities. But first of all, it must be taken into account that the task lies much deeper.

We need to educate a new generation of people. It is very important what young people, our young generation sees in the world around them. What it will be the space where our children will be brought up, play and grow [6]. This is very important, because a person, who sees the beautiful, as a rule, is not capable to violate laws and do other illegal actions.

It must be understood that the task is very serious and global.

### 2.2. Implementation of the project in the Sverdlovsk region and Ekaterinburg city

In 2018, the regional project "Formation of a comfortable urban environment in the Sverdlovsk region" was implemented. Over eight thousand events were held. Over three million people attended these events.

The goal of the project is to provide each citizen with safety, comfort, functionality and aesthetics of urbanized territories.

The formation of a comfortable urban environment will reduce social tensions, illuminate crowded streets below the crime rate, increase the proportion of people involved in sports at modern sports fields, and reduce morbidity. It is important for each citizen how street lighting is provided, the quality of street cleaning, the safe disposal of municipal waste [1, 2].

### *2.3. Social and cultural code of Ekaterinburg*

The Ekaterinburg city is located on the border of Europe and Asia and 1667 km to the east from Moscow. Ekaterinburg is the capital of the Sverdlovsk region in the Urals and the administrative center of the Ural Federal District. It is an industrial and mining, transport and logistics, cultural, administrative, scientific and educational center of the Urals. The city is attractive for investment [7].

Ekaterinburg is densely populated, but compact. According to Rosstat for 2018, the population is 1 468 833 people [8].

The very concept of "Uralets" (the person who lives in Ural region) refers to the socio-cultural perspective. Historically, the factories of the Urals were distinguished by polycentricity and autonomy. Traditions (merchants, business, cultural and historical) of a mutually beneficial partnership in business, government and society are preserved today. Today they are in demand and help in the development of the Urals.

## **3. Research part. Macroeconomic situation in Russia, the region and Ekaterinburg**

### *3.1. Ratings of investment attractiveness of territories*

Sverdlovsk region takes the 20th place among 85 Russian regions in the National Investment Climate Rating (created by the Agency for Strategic Initiatives) [9]. The study is based on calculations of forty-four indicators in four areas: the regulatory environment (quality of public services), business institutions (their effectiveness), infrastructure and resources (accessibility and quality of infrastructure), support for small businesses (the level of development of small businesses and various types of effectiveness support). Sverdlovsk region is a possible carrier of best practices for the following indicators based on the 2017 rating:

- The average number of procedures required for registration of legal entities;
- Satisfaction with the registration of legal entities;
- Assessment of the quality of telecommunication services by entrepreneurs;
- Evaluation of investment infrastructure by entrepreneurs by the number of small enterprises per thousand people [9, 10].

According to analysts at Fitch Ratings (2016–2017), the Sverdlovsk region confirmed a long-term issuer default rating (IDR) of BB + with a "stable" outlook. The rating "BB +" reflects the developed industrial economy of the Sverdlovsk region. The indicators of region socio-economic development are above the national average. The region has moderate debt and acceptable operating performance. Sverdlovsk region has acceptable budget indicators. This was supposed to provide an increase in the growth rate of tax revenues due to the developed tax base in the region and strict control over expenses [10].

The rating agency "Expert RA" assigned the category "1B" to the Sverdlovsk region (in the rating of the investment climate of Russian regions for 2017). This characterizes the high potential and moderate risk of the region. The study is based on official information from Rosstat and statistics from federal departments of Russia. Investment attractiveness in the rating is assessed by investment potential and investment risk [11].

The potential shows how much the region holds in the all-Russian market. The risk shows the scale of various problems that can be for an investor in the region. The total potential has nine constituents (they are labor, financial, industrial, consumer, institutional, infrastructure, natural resource, tourism and innovation potentials). Integral risk consists of six private risks (financial, social, managerial, economic, environmental and criminal). The contribution of each private risk or potential to the final indicator is estimated based on a survey of expert representatives, investment and banking communities [12].

### 3.2. Level of social development of the Russian Federation, Sverdlovsk region and Ekaterinburg

*3.2.1. Population dynamics, sex and age structure.* The population of the Russian Federation (as on April 2, 2018) is 146.9 million people. 74% of the population is urban, 26% is rural. 46% of the population are men, 54% are women. Of the total population under the working age population are 27 254 thousand people, older than the able-bodied population are 37 362 thousand people, able-bodied are 82 264 thousand people. For ten years (from 2008 to 2018) there has been a steady population growth.

4 325 256 people lived in the Sverdlovsk region in 2018, from them 1 984 167 are men and 2 341 089 are women. 2 367 093 people are the total able-bodied population, 841 741 people are younger than able-bodied people, 1 116 422 people are of retirement age. The population decreased in 2017 compared to 2016 by 4 750 people [13].

The population of Ekaterinburg is 1 468 833 people (as of 2018). The city is one of the fifteen millionaire cities in Russia.

*3.2.2. Development prospects of the region and Ekaterinburg.* Sverdlovsk region is one of the highly urbanized regions of Russia with high-quality infrastructure. Industry and trade are well developed here. There are many large educational institutions. However, there are a number of problems in the region. Residents do not think that their living standard is high. There are problems with ecology and environmental pollution. Single-industry towns are sources of problems. People living in them do not see their future prospects.

The Urals capital has high potential due to its history, excellent location near picturesque places, rich lands. Ekaterinburg is a modern and dynamically developing city, a real cultural and economic center of the Urals. A large number of smart, creative people with an active lifestyle live in the city. An active cultural life, educational institutions with high productivity make the capital of the Urals an attractive place to live.

However, in order to satisfy its ambitions, increase the pace of development, withstand competition, Ekaterinburg needs to quickly and effectively cope with current problems, keep up with global trends in urban space development or even get ahead of them [14].

## 4. Practical part. The project for improvement of Park areas Stone Tents in Ekaterinburg

Comfort is the main sign of a good public space. Currently, there are many interesting projects in Ekaterinburg. We will consider the problem of developing a comfortable urban environment using an applied example. This is a student project (completed at the Ural Federal University) to improve the Stone Tents Park in Ekaterinburg.

Stone Tents Park in the vicinity of Shartash Lake is one of the most popular holiday destinations for residents and visitors of our city [15].

The goal of our project is to propose an effective concept for ennoblement of the territory of the well-known park zone "Stone Tents".

To achieve the goal, an algorithm of the following actions was implemented:

- Find information related to the topic of the project;
- Study the opinion of local residents through a survey regarding the territory of the urban environment requiring improvement;
- Based on the survey, select the territory for the project implementation;
- Highlight features of the selected territory;
- Describe the main problems of the park area;
- Carry out a study visiting the place of the project area with a photo-fixation of the local landscape and conducting a survey of visitors to the "Stone Tents" territory;
- Determine the boundaries and size of the territory to be converted;
- Develop the main areas for improvement in the western part of the Stone Tents;

- Consider property issues and issues of ownership of the territory, study the existing legislative acts relating to the theme of the project;
- Develop and describe the concept of the park improvement project, build visual models in the landscape design program;
- Determine the costs of the development and implementation of the improvement project, as well as consider the environmental effectiveness of the project;
- Identify the possibility of attracting investors for financial support of the project;
- Describe the expected results of the Stone Tents park landscaping project.

The presented project also justifies the feasibility of carrying out actions to improve the Stone Tents Park. The analysis of a sociological survey conducted among urban residents is given. As a result, the main areas of improvement for this territory are developed, visualized in the landscape design program, and investors interested in the project are proposed [16, 17].

We conducted a survey among local residents regarding the park territory in the Ekaterinburg city, which requires first-priority landscaping. After analyzing the answers, we determined the main areas of improvement based on the identified problems of the park zone [18].

For a clearer picture of the real state of the Stone Tents park zone, its strengths and weaknesses were highlighted by the SWOT analysis method.

To develop the space of the main park avenue, which today is in a dilapidated state and completely not illuminated at night, we identified the main tasks of modernization: the installation of lamps, benches and the creation of a lane for cycling.

For clarity, the layout of the finished main road was developed in the landscape design program "realtime landscaping architect". We have presented a 2D model of the updated main park alley, as well as a 3D model with night lighting.

An integrated budget calculation was performed for all costs [19]. Next, the costs were calculated for the reconstruction of the basketball court, the installation of elements of sports facilities, benches, ballot boxes, etc. All calculations are made taking into account current market prices. Thus, the total cost will be in the range of twenty million rubles. This amount is justified by the presence of a beautiful central alley with artificial night lighting and a designated place for cyclists, secondary park paths made of natural stone, modern complexes for families, as well as an updated general park concept.

We proposed potential investors interested in landscaping the park [20–23].

Thus, as a result of the implementation of the landscaping project proposed by our team, the Stone Tents park will gain an attractive appearance for potential visitors and will become a favorite place for family vacations.

## 5. Results and suggestions

Today, there are many tools for implementing ideas for designing and creating a comfortable urban environment. All projects should be provided with more active participation of citizens, including youth, in the formation and implementation of these ideas into reality. Then it is possible to develop a systematic approach to improving the quality and comfort of life of citizens, create a positive social atmosphere in the cities of our great country. One of the main conditions for the implementation of such projects is public discussion, as well as the active use of visualization.

A comfortable urban environment can be associated with the development of the city as a modern metropolis. Why do we need this:

- 1) To know in what directions the city will be improved, to understand its purpose and its development potential;
- 2) To stimulate the dissemination of best practices and their application;
- 3) To encourage the adoption of risky decisions within the framework of a system based on the principles of accountability and transparency.

All of the above gives citizens the opportunity to creatively participate in the formation of a comfortable urban environment of the city.

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